Digital Public Administration factsheet 2023

Sweden

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1 Interoperability State-of-Play

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In 2017, the European Commission published the European Interoperability Framework (EIF) to give specific guidance on how to set up interoperable digital public services through a set of 47 recommendations divided in three pillars. The EIF Monitoring Mechanism (MM) was built on these pillars to evaluate the level of implementation of the framework within the Member States. Whereas during the previous, the MM relied upon three scoreboards, the 2022 edition includes an additional scoreboard on cross-border interoperability, assessing the level of implementation of 35 Recommendations. The mechanism is based on a set of 91 Key Performance Indicators (KPIs) clustered within the four scoreboards (Principles, Layers, Conceptual model and Cross-border interoperability), outlined below.

Scoreboard 1 Interoperability Principles	Recommendation(s) n°
Principle 1 - Subsidiarity and Proportionality	1
Principle 2 - Openness	2-4
Principle 3 - Transparency	5
Principle 4 - Reusability	6-7
Principle 5 - Technological neutrality and data portability	8-9
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Principle 7 - Inclusion and accessibility	14
Principle 8 - Security and privacy	15
Principle 9 - Multilingualism	16
Principle 10 - Administrative simplification	17
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Principle 12 - Assessment of Effectiveness and Efficiency	19

Scoreboard 2 Interoperability Layers	Recommendation(s) n°
Interoperability Governance	20-24
Integrated Public Service Governance	25-26
Legal Interoperability	27
Organisational Interoperability	28-29
Semantic Interoperability	30-32
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Scoreboard 3 Conceptual Model	Recommendation(s) n°
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Scoreboard 4 Cross-border Interoperability

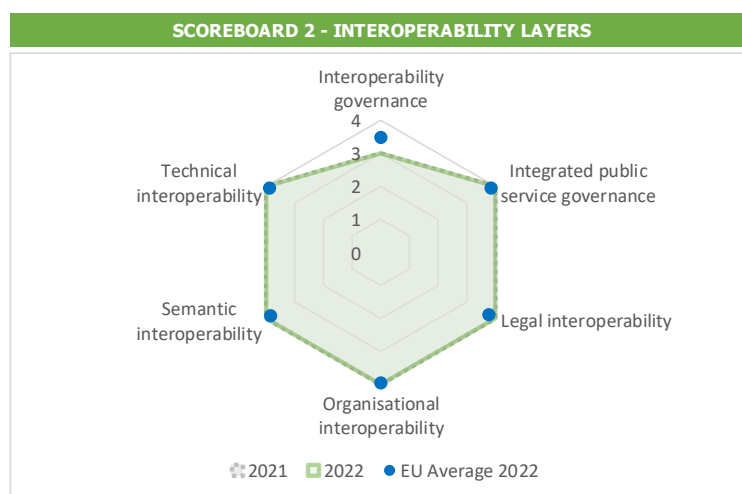Source: European Interoperability Framework Monitoring Mechanism 2022

Each scoreboard breaks down the results into thematic areas (i.e. principles). The thematic areas are evaluated on a scale from one to four, where one means a lower level of implementation and four means a higher level of implementation. The graphs below show the result of the EIF MM data collection exercise for Sweden in 2022, comparing it with the EU average as well as the performance of the country in 2021.
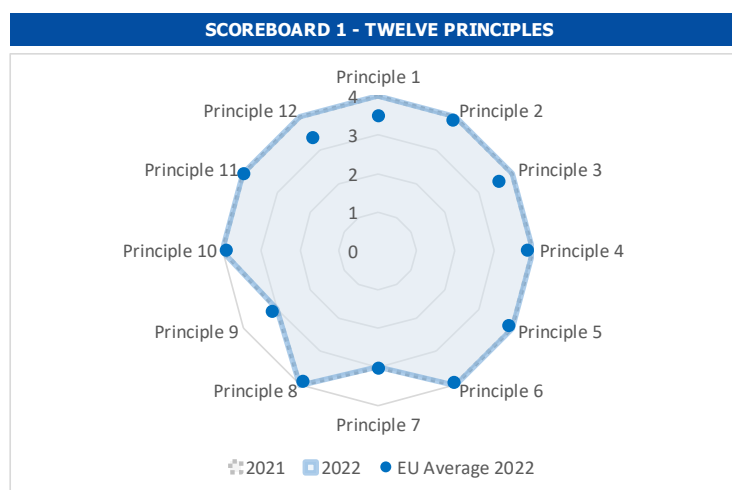
SCOREBOARD 1 - TWELVE PRINCIPLES

Source: European Interoperability Framework Monitoring Mechanism 2022
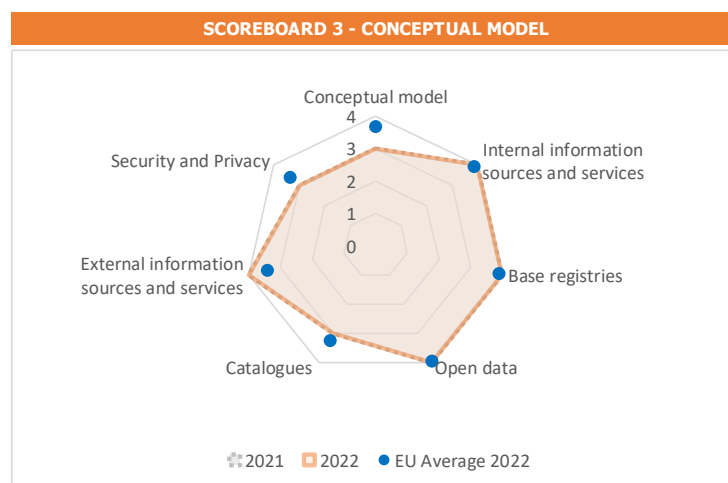
The Swedish results in Scoreboard 1 showcase an overall good implementation of the 12 EIF Principles. Notably, Sweden performs well above the European average for Principle 1 (Subsidiarity and Proportionality), Principle 3 (Transparency) and Principle 12 (Assessment of effectiveness of efficiency). Potential areas of improvement relate to the implementation of Principles 7 (Inclusion and accessibility) for which the score of 3 could be further improved to reach the European average. Particularly, the accessibility of European public services to all

citizens, including persons with disabilities, the elderly and other disadvantaged groups (Principle 7 – Recommendation 14), is partial and could be improved to reach the maximum score of 4.
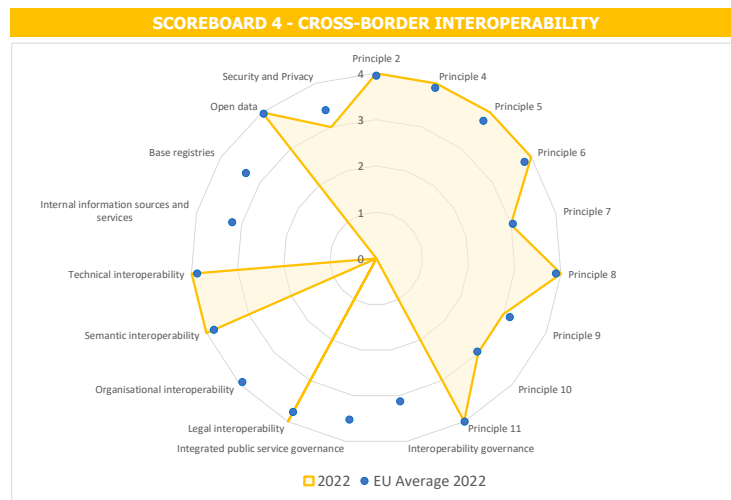

Source: European Interoperability Framework Monitoring Mechanism 2022

Sweden's scores in Scoreboard 2 illustrate an overall good performance of the country with mostly scores of 4 in all the interoperability layers, except for interoperability governance. Areas of improvement to strengthen the country's implementation of the recommendations under Scoreboard 2 are therefore related to interoperability governance. More specifically, with regard to the interoperability governance, whereby Sweden should work on ensuring a holistic governance of interoperability activities across administrative levels and sectors (Interoperability governance – Recommendation 20) and use a structured, transparent, objective and common approach to assessing and selecting standards and specifications (Interoperability governance – Recommendation 22).

Source: European Interoperability Framework Monitoring Mechanism 2022

The Swedish results in relation to the Conceptual Model in Scoreboard 3 show an upper-medium performance of the country. Sweden scores well above the EU average notably on the areas of Open Data and Base Registries. Nonetheless, potential areas of improvement prevail, notably with regard to the implementation of the recommendations related to the Conceptual model, to Catalogues and to Security and Privacy. More precisely, Sweden should decide on a common scheme for interconnecting loosely coupled service components and put in place and maintain the necessary infrastructure for establishing and maintaining European public services (Conceptual model – Recommendation 35). In addition, the country should further use trust services according to the Regulation on eID and Trust Services as mechanisms that ensure secure and protected data exchange in public services (Security and Privacy – Recommendation 47).

SCOREBOARD 4 - CROSS-BORDER INTEROPERABILITY

Source: European Interoperability Framework Monitoring Mechanism 2022

The results of Sweden on Scoreboard 4 on the Cross-Border Interoperability aspect show an upper-medium performance of the country. Particularly, Belgium received the highest score of four for six EIF principles, for legal, semantic and technical interoperability, as well as for the open data component of the Conceptual model. However, Sweden has still margin for improvement in relation to Principle 7 (Inclusion and accessibility – Cross-border), Principle 9 (Multilingualism – Cross-border), Principle 10 (Administrative simplification – Cross-border) as well as in relation to the area of Security and Privacy (Cross-border). More particularly, Sweden should work on simplifying processes and use digital channels whenever appropriate for the delivery of European public services, to respond promptly and with high quality to users' requests and reduce the administrative burden on public administrations, businesses and citizens.

Additional information on Sweden's results on the EIF Monitoring Mechanism is available online through interactive dashboards.

Curious about the state-of-play on digital public administrations in this country?

Please find here some relevant indicators and resources on this topic:
- Eurostat Information Society Indicators
- Digital Economy and Society Index (DESI)
- eGovernment Benchmark

2 Digital Public Administration Political Communications

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2.1 Specific Political Communications on Digital Public Administration

Berlin Declaration on Digital Society and Value-Based Digital Government

In December 2020, the Swedish government signed the Berlin Declaration on Digital Society and Value-Based Digital Government, thus re-affirming its commitment – together with other EU Member States – to foster digital transformation in order to allow citizens and businesses to harness the benefits and opportunities offered by modern digital technologies. The Declaration aims to contribute to a value-based digital transformation by addressing and strengthening digital participation and digital inclusion in European societies.

A Sustainable Digitalised Sweden – A Digital Strategy

In May 2017, the Swedish government presented the strategy 'A Sustainable Digitalised Sweden - A Digital Strategy'. The strategy explains how the digitalisation policy contributes to competitiveness, full employment, and economically, socially and environmentally sustainable development in the society. It sets the focus on the government's digitalisation policy.
To achieve the overall objective of Sweden of becoming a world leader in harnessing the opportunities of digital transformation, the strategy contains five goals:
- Digital skills: enhancing citizens' digital skills, so as to enable them to actively participate in the digital transformation;
- Digital security: increasing digital security, and thus citizens' trust and confidence in using digital services;
- Digital innovation: fostering digital innovation by creating the competitive conditions for the development and spread of new or improved products and services of value to people and businesses;
- Digital leadership: improving digital leadership, which entails better governance, but also measurement and follow-up activities; and
- Digital infrastructure: reinforcing the digital infrastructure, such as broadband, which is crucial for transmitting data.

Putting the Citizen at the Centre - A Digital Services Strategy

The Swedish government strategy for collaborative digital services in government administration, 'Putting the Citizen at the Centre', was launched in December 2012. This strategy describes how the Swedish government plans to further strengthen the ability of government agencies to work together in delivering digital services.
The most common digital services in the daily lives of both citizens and businesses have been further simplified. These digital services shall be developed in a user-centric way: simple, secure to use and easily accessible to everyone. Innovation has been enhanced by making it easier to find and use reusable public information and digital services with interfaces that can be operated by other systems. The publication of public sector information on the internet and the use of social media have promoted both transparency and citizen involvement. Quality and efficiency in government administration have been increased through standardised information management, better information security and digitised processes. Such internal efficiency in developing digital services must always be conditional on the protection of personal privacy and the need for confidentiality.
The above-mentioned objectives have formed the basis of the Swedish government's coordinated and overriding development of inter-agency cross-sectorial projects.

Development for the Digital Age - A New Strategy for Local and Regional Governments

In 2019, the Swedish Association of Local Authorities and Regions (SALAR) adopted a new strategy for digital government, aiming to align efforts related to digital development in SALAR, i.e. the Swedish municipalities and regions, as well as in the SALAR groups Adda (formerly named

SKL Kommentus) and Inera AB. The strategy is aligned with the Swedish framework for digital collaboration and the European Interoperability Framework (EIF).

National Strategy for Data

In October 2021, the government adopted a National Strategy for Data aiming to increase the amount of data that can be used for the development of, for example, artificial intelligence (AI) by facilitating data sharing. As data is a strategic resource for the future, Sweden actively contributes to the implementation of the European data strategy and to the OECD recommendation on increased data sharing.

2.2 Interoperability

National Standardisation Strategy

The National Standardisation Strategy *(Regeringens strategi för standardisering)* was adopted in July 2018. The strategy identifies a number of Swedish strategic priorities from a national, European and international perspective, and describes how they should be addressed through an active Swedish standardisation policy. In addition, sector-specific priorities are also described. These priorities have been identified through a mapping activity and standardisation analysis of the government and other relevant authorities.

`new` ## Interoperable Data Exchange

During the last years, the Swedish government has increasingly focused on interoperability and standardisation, as demonstrated by the different government initiatives for standardised and interoperable information and data exchange.
More specifically, two government initiatives were launched in May 2018, focusing on establishing the foundation for a more standardised and interoperable national approach to base registries and information exchange. Several key stakeholders were involved in the initiatives, including some of the larger government agencies and the Agency for Digital Government (Digg), which had the responsibility to coordinate work.
The final reports for the initiatives were submitted in 2019. In line with the proposals in the reports, two new government initiatives were started at the end of 2019 with a view to establishing a national framework for basic data in public administration and a digital infrastructure for information exchange.
Work continued with a new government initiative launched in January 2023, when Digg presented a long-term plan for the development of the infrastructure, together with details concerning its funding. All information can be found in the final report published in the same month.

Swedish Framework for Digital Collaboration

The Swedish Framework for Digital Collaboration (i.e. the Swedish version of the EIF) aims to help all public and publicly funded organisations to navigate in the same direction and thereby be able to exchange information effectively. It was developed by several government agencies in a collaboration programme called eSam and is now managed by Digg.

Standard Business Reporting

The Standard Business Reporting (SBR) is a methodology for digital exchange of structured business information whose basis consists of financial information. That way, the SBR, based on open standards to increase the availability of business data, creates business value through digitalised financial information.
The formal assignment to further develop the service for digital submission of annual reports (N2018 / 02033 / FF) was completed in March 2021. The heads of the collaborating authorities, however, decided to continue working in a voluntary collaboration under the leadership of the Swedish Companies Registration Office with the aim of establishing the SBR in Sweden. The work is further based on the recommendations submitted to the government in the final report in March 2021. In 2022, the Swedish Companies Registration Office, together with the cooperating authorities, worked out a roadmap that extends to 2027. Collaboration will take place with the pan-Nordic programme Nordic Smart Government & Business in order to ease and reduce the reporting burden for Swedish and Nordic companies with the help of structured and digitalised data. To that end, the SBR as a concept and methodology gives companies and authorities an

increased opportunity for simplified exchange of financial information that originates in the companies' accounting system.

As part of the exploratory phase in 2022, the SBR project decided not to set up a regulatory sandbox. The aim of testing new possibilities to increase automated and digitalised information exchange between companies and authorities will be part of the ordinary development of the SBR ecosystem. The initial analysis shows that an increased focus on technology development in close cooperation with the stakeholders will be more efficient and come into effect faster than development through regulatory sandboxes.

2.3 Key Enablers

2.3.1 Open data, Reusability and Access to Public Information

Initiative for Increasing Individuals' Insight of and Control over Personal Information

In 2020, the Swedish government initiated an assignment aimed at increasing individuals' insight of and possible control over information about them available within public administration organisations. This mission was assigned as joint effort to the Swedish Public Employment Service, the Swedish eHealth Agency, Digg and the Swedish Tax Agency. It included the development of a conceptual solution that can be implemented as a common digital infrastructure within public administrations, and which can be further developed to also connect with private actors' digital infrastructure and services. The final report was delivered in June 2021.

The conceptual work has then continued within new government assignments, although not as a main focus but rather as an architectural component. Technical solutions are headed by the Swedish Public Employment Service. Furthermore, the Norwegian Digitalisation Agency received an identical assignment from the Norwegian government and representatives from Digg have continuous access to the advancements made after having been invited to participate in an advisory capacity.

2.3.2 eID and Trust Services

Cross-border Digital Services Programme

The Cross-border Digital Services Programme is a strategic initiative that aims to accelerate the digital transformation in the Nordic-Baltic region. Overall, the goal is to increase mobility and integration in the region through seamless access to digital services across borders. The initiative will add value to citizens, businesses and public authorities. A representative from Digg and the Ministry of Finance participate in the Programme Committee.

More specifically, the programme has the following goals:
- Building secure and trusted electronic identification (eID) interoperability;
- Promoting cross-border data exchange between authorities;
- Enabling digital services across borders; and
- Establishing an open funding mechanism (the CBDS Fund).

Several projects are working on, e.g., developing the Nordic-Baltic eID (NOBID), enabling cross-border digital services, including for studying abroad, and carrying out pilots in mapping and testing evidence exchange under the Single Digital Gateway Regulation.

`new` Plan for a National eID

In June 2022 the government assigned Digg the task of analysing possibilities and submitting proposals for the production and operation of an eID with level of assurance 'high' provided by a governmental authority. The main objective is to include those who today cannot get an eID. Digg estimates that the development of an eID issued by the government will take at least 24 months. On 22 December 2022 the government announced the appointment of a Committee of Inquiry to further examine and suggest how an eID with level of assurance 'high' can be designed and provided by a government authority. The Committee will also analyse and propose how a digital identity wallet can be issued according to the requirements in the upcoming European Union (EU) Regulation eIDAS II. All European Digital Identity Wallets should allow users to electronically identify and authenticate online and offline across borders for accessing a wide range of public and private services, such as opening a bank account or declaring taxes in all EU countries. The

users shall be in full control of the use of the European Digital Identity Wallet and of the data contained therein.

eID for Employees

The possibility to use eID for employees in external services outside of the employee's organisation has been introduced in form of an agreement on the business terms and technical requirements. One of the most important features is the possibility to use an organisation's specific identifier instead of the Swedish person identity number. This pseudonym decreases the risk of threats against employees. The other requirements and the level of assurance classification are the same. This means that the same trust framework (*Tillitsramverket för Svensk E-legitimation*), with only minor differences compared with eIDAS Implementing Regulation (EU) 2015/1502, and the same framework for interoperability (Technical Specifications for the Swedish eID Framework) are used for both ordinary eID and eID for employees. Since this possibility was open recently, only a few actors have signed the contracts, but many more have shown interest to use this possibility in the future.

2.3.3 Security Aspects

National Cybersecurity Strategy

The government presented Sweden's first National Cybersecurity Strategy in June 2017. In July 2018 the strategy was then supplemented with an appendix which, among other things, included an overview of ongoing and completed measures initiated by the government in 2017–2018, totalling approximately 50.

At the beginning of March 2019, seven government agencies with responsibilities in the field of cybersecurity also presented a Comprehensive Cybersecurity Action Plan 2019-2020 to implement the strategy at the agency level. The action plan contained 77 of the most important measures that were scheduled to begin implementation in 2019. The Swedish Civil Contingencies Agency (MSB), together with the same seven government agencies, released updated versions of the action plan annually until 2022. The updated versions contain new measures to be initiated as well as an evaluation of the measures introduced starting in 2019. The latest update of the Comprehensive Cybersecurity Action Plan was released and made publicly available on 2 March 2022. Moreover, Sweden also intends to present a new National Cybersecurity Strategy, in line with the NIS2 directive.

2.3.4 Interconnection of Base Registries

References to the Once-Only Principle

Although the Once-Only principle (OOP) is not legally mandatory in Sweden, the Swedish national budget proposal for 2017 clearly referred to it and provided for cases where it should be applied. From a Swedish perspective, the OOP means that an amount of data reported to an authority must, if possible, be reused before it is requested again. Managed by Digg, the OOP is also part of the Swedish Framework for Digital Collaboration. Additionally, a Swedish government committee has been in charge of developing further proposals and recommendations for the application of the OOP in Sweden as to the companies' interactions with the public sector. It mainly proposed how coordination with regard to the OOP can be organised, and how a good and consistent description of the data requirement can be maintained.

Two government initiatives were launched in May 2018, focussing on establishing the foundation for a more standardised and interoperable national approach to base registries and information exchange. Several key stakeholders were involved, including some of the larger government agencies and Digg, which had the responsibility to coordinate work. The final reports for these initiatives were submitted in 2019. As envisioned in the reports, two new government initiatives were launched at the end of the same year with the aim of establishing a framework for national basic data in public administration and a common digital management infrastructure for information exchange. An interim report on the two initiatives was published in 2021. The two initiatives were then implemented in 2022.

Furthermore, a number of Swedish authorities, mainly the Swedish Companies Registration Office, the Swedish Tax Agency and the Stockholm University, participated in the European large-scale pilot projects Once-Only Principle (OOP) and Digital Europe For All (DE4A), both exploring the OOP prior to the introduction of the Single Digital Gateway Regulation.

The Nordic Council of Ministers is the official body for inter-governmental cooperation in the Nordic region. Under its leadership, together with other countries, Sweden is working with a proof of concept (POC) to test the development of the Once-Only technical system (OOTS). Sweden also participates in the Single Digital Gateway coordination group and the six subgroups that are organised by the European Commission to implement regulations regarding the OOTS. Additionally, Sweden and the Netherlands are working together to learn from each other's Single Digital Gateway solutions in general and to test technical solutions between the two countries' OOTS systems.

2.3.5 eProcurement

Guidance from Central Government Authorities

The National Agency for Public Procurement provides guidance on eProcurement, eCommerce, the usage of dynamic purchasing systems and the sustainability analysis. The adopted method allows government agencies to focus their sustainability efforts on high impact categories.
Digg is the Swedish Peppol authority, leading the work on the national Peppol infrastructure and offering support primarily to service providers within Peppol but also to end users, like suppliers from the private sector and buyers in the public sector. It provides guidance on eProcurement and the use of the Peppol infrastructure and standards for post-award messages.

2.4 Domain-specific Political Communications

Vision for eHealth 2025

Digitisation offers great opportunities for the future of social services, health and medical care. Modern information and communication technologies (ICT) can make it easier for individuals to be involved in their own health and social care, support contact between individuals and service providers, and provide more efficient support systems for staff at service providers.
In 2016, the government and SALAR agreed on a common vision for eHealth up to 2025, aiming to provide support to make use of the opportunities of digitisation in social services and healthcare. In particular, it says that "*[i]*n 2025, Sweden will be best in the world at using the opportunities offered by digitalisation and eHealth to make it easier for people to achieve good and equal health and welfare, and to develop and strengthen their own resources for increased independence and participation in the life of society*".*
A Strategy for eHealth for the period 2020–2022 has complemented the vision. The purpose of the strategy is to determine how the joint work of the government and SALAR should be designed and prioritised. The priorities identified are: (i) people awareness and involvement; (ii) safe and secure information; (iii) knowledge; (iv) digital transformation; and (v) collaboration. The government and SALAR will also work together on the legal framework and the consistent use of terminology and standards.

Digitalisation of the Judiciary

Digitalisation can contribute to a judicial system which is well-functioning, efficient, based on the rule of law and trusted by the people. Based on the Ordinance (2019:1283) on the Digitalisation of the Judiciary, authorities in the judicial system should accelerate the digital exchange of information and at the same time strengthen their digital government capability. In light of this, judicial authorities have been commissioned to jointly develop methods for managing criminal cases focusing on efficiency and to examine how to offer crime victims a better digital response. In order to strengthen coordination, the government established a Council for the Digitalisation of the Judiciary, consisting of representatives from the law enforcement agencies. The Council held its first meeting in September 2020.

2.5 Innovative Technologies

2.5.1 Artificial Intelligence (AI)

Declaration on AI in the Nordic-Baltic Region

In May 2018, the Ministers responsible for digital development from Denmark, Estonia, Finland, the Faroe Islands, Iceland, Latvia, Lithuania, Norway, Sweden and the Åland Islands released a Declaration on AI in the Nordic-Baltic Region. The Declaration aims to create synergies among the Nordic-Baltic countries on:
- Improving opportunities for skills development with the goal of enabling more authorities, companies and organisations to use AI;
- Enhancing access to data for AI to be used for better service to citizens and businesses in the region;
- Developing ethical and transparent guidelines, standards, principles and values to guide on when and how AI applications should be used;
- Ensuring that infrastructure, hardware, software and data, all of which are central to the use of AI, are based on standards, enabling interoperability, privacy, security, trust, good usability and portability;
- Ensuring that AI gets a prominent place in the European discussion and implementation of initiatives within the framework of the Digital Single Market;
- Avoiding unnecessary regulation in the area, which is under rapid development; and
- Utilising the structure of the Nordic Council of Ministers to facilitate the collaboration in relevant policy areas.

`new` #### Government Assignment to Promote Public Administration's Ability to Use AI

In 2021, the Swedish government gave an assignment to four government agencies, the Swedish Companies Registration Office (*Bolagsverket*), the Swedish Public Employment Service (*Arbetsförmedlingen*), Digg and the Swedish Tax Agency (*Skatteverket*), aiming at promoting the ability of the public administration to use AI. The assignment was completed in January 2023 with the following results:
- A collaborative platform was created with the deliverables from the AI assignment, such as an AI guide, a trust model and information about relevant AI projects. The results have been made available on a web page (https://offentligai.seon offentligai.se) to encourage learning, sharing and reuse within public administration, academia and industry;
- Two AI building blocks (a translation and a transcription service) were developed and, according to the plan, should be made available in the Swedish digital infrastructure (Ena);
- A policy lab was established together with the participating authorities, Combient AB and RISE Research Institutes of Sweden AB, with the aim of investigating how the upcoming AI regulation can affect AI work in practice; and
- Needs analyses were carried out, showing a clear need for a joint administration effort to make an AI infrastructure available for all public actors in Sweden.

National Approach to Artificial Intelligence

The Swedish government adopted the National Approach to Artificial Intelligence in June 2018. It contains key conditions for the use of AI in Sweden to achieve the government's goal to make Sweden a leader in harnessing the opportunities that AI can offer.
In January 2020, Digg released its report 'Promoting public administration's ability to use AI'. This report, together with the Vinnova (the Swedish Innovation Agency) 2018 report 'Artificial intelligence in Swedish business and society' and the Statistics Sweden's (SCB) report on charting the use of AI and the analysis of large amounts of data in Sweden of November 2020, provides a comprehensive overview of the current status of AI in Sweden, its uses and its obstacles, as well as recommendations for new initiatives. All reports are available to governmental decision-makers. Furthermore, Vinnova has declared that over the next ten years an additional SEK 50 million per year will be added to the annual SEK 150 million for financing AI projects.
In November 2020, the Swedish eHealth Agency published its report 'Artificial Intelligence and eHealth' (*Artificiell intelligens och e-hälsa*). In this report the Agency discusses possibilities and challenges, national and international investments in AI, legal and ethical aspects, and competence needs, specifically in the healthcare sector.

2.5.2 Distributed Ledger Technologies

European Blockchain Partnership

Sweden has committed to the European Blockchain Partnership by sending experts to most of the user groups and by hosting a European Blockchain Services Infrastructure (EBSI) test node. Sweden is currently chair of the European Blockchain Partnership, together with France and Czechia. Additionally, Sweden is participating in two multi-country projects on European common data infrastructure and services, and the EBSI, both aiming at improving the online provision of digital public services, and making them more user-friendly and seamless.

`new` ### Proof of Concept using Distributed Ledger Technology/Blockchain

The Swedish government gave the Swedish Companies Registration Office (*Bolagsverket*) an assignment in 2021 to develop a POC using the blockchain or the distributed ledger technology (DLT) with the purpose of giving companies more control over their data and more opportunities to share data with each other. The Office will also conduct an analysis on how blockchain is being used in other areas than for company data.

Within the framework of the assignment, the Swedish Companies Registration Office has also started a collaboration with the Gothenburg Blockchain Lab. In this context, the Gothenburg Blockchain Lab will conduct a case study, headed by PhD student Mikael Lindquist, and contribute with its knowledge and expertise to the assignment.

2.5.3 Big Data

No political communication has been adopted in this field to date.

2.5.4 Cloud Computing

No political communication has been adopted in this field to date.

2.5.5 Internet of Things (IoT)

IoT Sverige

IoT Sverige is a national initiative to make Sweden a leading force in the usage of the Internet of Things (IoT). It is one of 17 strategic innovation programmes funded by the Swedish Research Council, Vinnova, the Swedish Energy Agency and Formas. IoT Sverige finances innovative projects within the IoT starting from the assumption that the IoT will contribute to solving societal challenges in cooperation with municipalities, companies and researchers, and in that way strengthen companies' international competitiveness.

`new` ## 2.5.6 High-performance Computing

Sweden is a participating country in the EuroHPC Joint Undertaking (JU), where it is represented by the Swedish Research Council. As part of EuroHPC JU, the EuroCC National Competence Center Sweden (ENCCS) provides high-performance computing training and support for industry, academia and public administration for free. The second phase of the EuroCC, with national financial support and grants from the Digital Europe Programme, started on 1 January 2023.

The country also participates in the LUMI consortium (lumi-supercomputer.eu). LUMI has been in full operation and open for all European customers since December 2022, including with a graphics programming unit (GPU) cluster. In May 2022 LUMI was ranked 3rd among the world's supercomputers in the Top500 and Green500 rankings.

In 2022, the Swedish Research Council decided on Swedish participation in the following initiatives as of 2023:

- EuroHPC-2022-CEI-QUT-01 Quantum Computing: investment in a quantum computer connected to LUMI but placed in Czechia, SEK 1 million per year for 3 years;
- Horizon-EUROHPC-JU-2021-COE-01-01 and 02: Swedish participation in four centres of excellence for the development and support of applications on EuroHPC computers (three from the Swedish Research Council and one from Formas), approximately SEK 6 million per year for four years; and

- Digital-EUROHPC-JU-2022-NCC-01-RIA: continued financing of the ENCCS, with approximately SEK 4 million per year for 3 years.

An investment has been made to expand Sweden's fastest supercomputer, called Berzelius, at the National Supercomputer Centre (NSC) in Linköping, with 34 more DGX-A100 compute nodes, giving a total computing capacity of 470 PetaFlops (AI).

Starting on 1 January 2023, the National Academic Infrastructure for Supercomputing in Sweden (NAISS) is the new organization for high-performance computing, storage and data services for academic users in Sweden. The Linköping University is the host organisation, but NAISS acts independently with a national perspective and responsibility. The former organisation, called SNIC, no longer exists.

2.5.7 High-speed Broadband Connectivity

new

A Completely Connected Sweden by 2025 – A Broadband Strategy

In March 2017, the Swedish government released Sweden's Broadband Strategy, setting out the government's ambitions concerning coverage in the entire country. By way of the broadband policy, the government would like to inspire all operators to a continuous and fast broadband expansion and, especially, to see an improvement for users who find themselves outside densely populated areas and in small-populated areas, in order for Sweden to be completely connected. The strategy's starting point is a market-driven development complemented by public efforts.

The Swedish Post and Telecom Authority (PTS) has noted in a report (PTS-ER-2022:33) to the Swedish government the need to revise the current broadband strategy and update it with new connectivity targets post-2025. Suggestions include renewed targets for homes to be connected and a new target for user take-up.

During the last three years, the PTS has coordinated and been responsible for the State aid programme for broadband infrastructure investments (gigabit connectivity). During the timeframe concerned (Q2 2022–Q1 2023), State aid amounting to almost SEK 1.3 billion was approved, giving approximately 34 000 buildings the opportunity to connect to highspeed broadband.

In its capacity as coordinator of the Connective Europe Facility (CEF), the PTS will also assist Swedish actors applying for funding for high-capacity networks, including 5G systems, for socioeconomic drivers such as hospitals, schools and public areas.

More than 96% of households in Sweden have gigabit access, according to the latest broadband survey by the PTS (October 2021). The corresponding share for rural areas is around 76%. Having reached its peak in 2016, fibre roll-out in Sweden continues to slow down. The PTS expects that this downward trend will continue in the coming years, although State funding will soften the decline and improve gigabit access in rural areas. According to the latest forecasts by the PTS (October 2022), around 98% of households in Sweden will have gigabit access by 2025 and the share is likely to increase further in the years after 2025, as the full effects of State funding programmes become visible.

Letter of Intent on the Development of 5G in the Nordic Region

In May 2018, Sweden signed a Letter of Intent on the Development of 5G in the Nordic Region within the framework of the Nordic Council of Ministers. In addition to accelerating the development of 5G, the Declaration outlines the collective vision of the Nordic region becoming the first interconnected 5G region in the world and identifies areas in which Nordic cooperation needs to be strengthened. The document also acknowledges that the deployment of 5G will require substantial investments and an appropriate regulatory framework, both in the national contexts and in forging a common Nordic 5G space.

Around 20% of Sweden's population has 5G coverage according to the latest data by the PTS (October 2021). Mobile network operators have started a large-scale roll-out of 5G, with mobile network investments doubling in 2021. The PTS expects that investments will continue in the next years, as mobile network operators roll out their 5G networks and upgrade 4G networks. These investments will lead to a rapidly growing 5G population coverage and a substantial increase in network capacity, although end users will probably not receive gigabit access, at least not on a larger scale, as a result.

2.5.8 GovTech

GovTech Sweden

GovTech Sweden creates, develops and supports the ecosystem for GovTech in Sweden and is an exchange platform for ideas and innovations that benefit society. In this ecosystem, users and value creators in the public and private sectors can provide competence and support collaboration. The idea is to create a space where to secure and increase societal value in the digital transformation through cooperation among different actors.

GovTech Sweden has intensified the efforts to increase the use of innovative procurement systems in the public procurement procedures to allow for start-ups, and innovative small and medium-sized enterprises (SMEs) to compete with larger private sector actors. Projects like the Demand Accelerator (*Efterfrågeacceleratorn*) and Ignite Public serve to create meeting places for start-ups and public sector representatives, as well as programmes for ensuring that good solutions to public sector challenges are accelerated within a framework that includes procurement procedures for successful POCs.

2.5.9 Other Innovative Technologies

Use of New Technologies in Public Sector

The Swedish Mapping, Cadastral and Land Registration Authority (*Lantmäteriet*) and Digg jointly carried out a government assignment to test new technology for automation in public administration. The goal of the assignment was to explore how the public sector's processes and routines can be automated while maintaining or increasing quality and transparency behind decision-making.

The result, outlined in the December 2020 report, is a trust model for automation in public administration aimed at maintaining trust in the public administration. It is based on transparency and understanding to ensure trust and confidence. The concept was tested at a function of the Land Registry but is generic and intended for use in the entire public sector. The findings of the report are now being used in the above-mentioned assignment to promote public administration's ability to use AI (see Section 3.5.1).

3 Digital Public Administration Legislation

3 Digital Public Administration Legislation

3.1 Specific Legislation on Digital Public Administration

Administrative Procedure Act

In 2018, Sweden adopted an updated version of the Administrative Procedure Act (*Förvaltningslag*). The law is significantly more technology-independent than its previous equivalent and welcomes digital communication.

3.2 Interoperability

Set-up of Standards and Specifications for the Health and Social Care System

To improve interoperability within the healthcare and social service system, the Swedish eHealth Agency is working with an online catalogue of eHealth specifications. The catalogue furthers the vision to eliminate ambiguity when systems, professionals and organisations exchange information. Harmonised and reusable specifications – and a shared commitment to ensure their widespread adoption – are fundamental to achieve interoperability.
In addition, the National Board of Health and Welfare has investigated how and to what extent different types of AI solutions are being applied within the healthcare system.

Governmental Investigations on Interoperability

Two governmental investigations were launched during 2022 regarding enhanced interoperability: (i) developed regulation and control of interoperability when sharing data within the public administration and from the public administration to external actors (2022:118); and (ii) health data as a national interest – legislation for interoperability (2022:98).

3.3 Key Enablers

Initiative for Providing Legal Support to Public Sector Actors regarding Digitalisation

In 2020, the Swedish government assigned Digg the responsibility for establishing processes and capacity for providing legal support to public administrations in issues related to digitalisation and the emergence of a common public sector digital infrastructure. By developing forms for spreading information and knowledge about legislation related to digitalisation in an easily accessible manner, the aim is to further increase public administration organisations' capabilities to address future challenges of digitalisation.

3.3.1 Open data, Reusability and Access to Public Information

Freedom of the Press Act

In 1766, Sweden became the first country in the world to introduce legislation on freedom of information with the Freedom of the Press Act. This act was reviewed in 1949 and last amended on 1 January 2011. Chapter 2 of the act specifies that "every Swedish subject shall have free access to official documents". Public authorities shall respond speedily to requests for official documents. Requests can be in any form and anonymous. This is known as the principle of public access to official records. Each agency is required to keep a register of all official documents and most indices should be publicly available. An effort is currently being made to make the registers available electronically. Decisions by public authorities to deny access to official documents may be appealed. Complaints can also be lodged to the Parliamentary Ombudsman, who can investigate and issue non-binding decisions.

Act on Public Access to Information and Secrecy

The Act (2009:400) on Public Access to Information and Secrecy contains exceptions to the principle of public access to official records in the form of provisions on confidentiality and non-disclosure of certain public documents.

Act on Accessibility of Digital Public Services

The EU Web Accessibility Directive (2016/2102) was transposed in Sweden by the Act (2018:1937) on Accessibility of Digital Public Services and the accompanying Ordinance (2018:1938) on Accessibility of Digital Public Services, assigning regulatory rights to Digg. Digg published the required regulations (MDFFS 2019:2) in May 2019, establishing that the accessibility of websites and mobile applications of public sector bodies in Sweden shall conform to the requirements set forth in Article 4 of the Directive.

Act on the Reuse of Public Administration Documents

The EU Open Data Directive (2019/1024) was implemented in Sweden through the Act (2022:818) on the Public Sector Making Data Available. Both pieces of legislation aim to encourage the public sector to make data available for reuse, in particular in the form of open data. The overarching purpose of the directive is to promote the use of open data and stimulate innovation in products and services.

3.3.2 eID and Trust Services

eIDAS Regulation

Sweden complies with Regulation 910/2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation) and has notified one Swedish eID scheme in accordance with the Regulation. After prenotification and peer-review, the Cooperation Network adopted a positive opinion on two additional eID schemes, which, however, have not been notified.
The Act (2016:561) on Supplementing Provisions to the eIDAS Regulation contains several provisions regarding, for example, enforcement measures.

Act on the Systems of Choice for Electronic Identification Services

The Act (2013:311) on the Systems of Choice for Electronic Identification Services aims to allow the user to choose between a variety of privately issued eIDs approved by Digg when interacting with the authorities.

Ordinance on the Common Public Sector Infrastructure for Secure Electronic Mail

According to the Ordinance on the Common Public Sector Infrastructure for Secure Electronic Mail (SFS 2018:357), Digg should provide a common public sector infrastructure which makes it possible for public sector bodies to send secure electronic mail to individuals.

3.3.3 Security Aspects

Protective Security Act

The Protective Security Act protects activities of importance for Sweden's national security and also encompasses activities covered by an international binding security commitment for Sweden. It emphasises that security-sensitive activities can be performed by both government agencies and private operators. Also, in addition to regulating security for the handling of classified information, it emphasises the need for protection of other security-sensitive domains, such as essential information systems.

Transposition of the NIS Directive

Directive 2016/1148 concerning measures for a high common level of security of network and information systems across the Union (NIS Directive) was transposed into Swedish law on 1 August 2018, through SFS 2018:1174. Operators of essential services and digital services became subject to information security requirements in accordance with the NIS Directive.

Data Protection Act

In many areas of administration, special registry acts supplement the provisions of the General Data Protection Regulation (GDPR) and the Swedish law (2018:218) complementing the GDPR.

3.3.4 Interconnection of Base Registries

Population Registration Act

The Population Registration Act describes when and where a person has to be registered, when a change of address has to be reported and how a population registration decision may be appealed. The act is supplemented by a Population Registration Ordinance, which includes rules prescribing that certain authorities should furnish the population registry with information concerning addresses. Together with the Civil Registration Act, the Population Registration Act regulates the Population Registry.

Civil Registration Act

The Civil Registration Act describes which registries must be kept, as well as the purpose of the registries, what they may contain and how users can search for information within their systems. The act is supplemented by the Population Registration Ordinance, stating, among other things, when information should be transferred between the different registries. Together with the Population Registration Act, the Civil Registration Act regulates the Population Registry.

Road Traffic Registration Act

The Act (2019:370) on Vehicle Registration and Use contains provisions on the registration of motor vehicles and trailers in the Road Traffic Registry. The information that must be registered in the Road Traffic Registry is specified in the Act (2019: 369) on Road Traffic Data and the regulations that have been issued in connection with the act. The different pieces of legislation contain details on items such as vehicle registration, registration fees, data on driver's license registration and the right to request information.

Real Property Registry Act

The Real Property Registry was established by the Act (2000:224) on the Real Property Registry. The act includes provisions on the purpose and content of the registry, the agency which enters the information into the registry, the privacy management, the disclosure of records for automatic processing, the fees, etc.
The Swedish Mapping, Cadastral and Land Registration Authority publishes the information contained in the registry and makes it available to everyone. The information within the Real Property Registry is open for reuse for certain purposes. Organisations can apply to get access to information from the registry if the purpose for reusing the information is legitimate. The information in the Real Property Registry is available in standardised and interoperable formats, according to the INSPIRE Directive.

Tax Registration Act

The Act (2001:181) on Tax Registration defines the content and functions of the Tax Registry under the agency of the Ministry of Finance. It also provides details regarding access to data in the Tax Registry.

Companies Act

The Act (2005:551) on Companies defines the registration and running of limited liability companies. The Swedish Companies Registration Office is responsible for the Swedish Business Registry under the agency of the Ministry of Trade and Industry.

3.3.5 eProcurement

Act on Public Procurement

Public procurement is mainly governed by the Swedish Act (2016:1145) on Public Procurement, which is largely based on the EU Directive on public procurement (2014/24/EU).

eInvoicing Legislation

In Sweden, the responsible entity in the field of eInvoicing is the Ministry of Finance. As stated in the applicable legislation (Ordinance for Accounting, 2000; Ordinance for Electronic Information Exchange, 2003) eInvoicing has been mandatory in Sweden since 2008 for central government agencies. According to the accompanying regulations all central government authorities must be

registered in the Peppol infrastructure for receiving eInvoices and must also be able to send eInvoices in Peppol.

All public procurements initiated after 1 April 2019 must be invoiced electronically (Law on Electronic Invoices as a Result of Public Procurement, 2018). The law applies to all public procurements above and below the set thresholds, and includes direct procurements. All suppliers to the public sector must send eInvoices, and buyers must be able to receive and process eInvoices. eInvoices must comply with the European standard, EN 16931, if no other standard is agreed upon. Digg recommends the use of Peppol BIS Billing 3, which is an implementation (CIUS) of the European standard. A supplier which does not send invoices that meet the requirements of the law may be fined.

Public Procurement Statistics

New legislation on public procurement statistics (*Lag om upphandlingsstatistik*) entered into force in 2020. The legislation aims to ensure public access to procurement data. The National Agency for Public Procurement is responsible for the governance of a national statistical database for public procurement.

3.4 Domain-specific Legislation

eJustice Legislation

In May 2018, amendments were made in the field of eJustice to allow the use of electronic signatures when signing court decisions, and applying for both summary proceedings related to an order to pay and summary proceedings for assistance. Furthermore, electronic signatures may also be used when accepting orders for summary punishment and breach-of-regulations fines, which, among other things, enables a more digital management of fines for traffic violations.

In November 2020, changes to the legislation were passed through the act (2020:918) amending the Swedish Code of Judicial Procedure in order to further enable and facilitate digital communication in court proceedings. The changes provide, among other things, that as of 2021 Swedish general courts will accept applications for summons and powers of attorney that are signed electronically using an advanced electronic signature. Measures were also taken to reduce the need for paper copies during court proceedings.

Legislation on the National Medication List

In June 2018 the Swedish Parliament approved a proposal from the government for new legislation on the National Medication List. The National Medication List creates a single source for data on a patient's prescribed medicines and other products while safeguarding the patient's right to privacy. The data may, for example, be used by patients, pharmacies and healthcare providers, under certain circumstances.

The new act (SFS 2018:1212) on the National Medication List entered into force on 1 May 2021, with a transition period of two years. During the transition period, healthcare providers must adapt their systems to the new legislation. Existing information technology (IT) services and systems will be phased out after the transition period but will continue being in production, in parallel with the new IT services that have been developed for the new list.

Registering data in the National Medication List will be mandatory for pharmacies and prescribers of medicines. Patients can block access to certain information but not opt-out from the registration. Information will be stored for five years.

Act on Electronic Commerce and other Information Society Services

Adopted in 2002, the Act on Electronic Commerce and other Information Society Services transposed Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce (Directive on electronic commerce). It stipulates the obligations of service providers and regulates the treatment of information submitted online.

3.5 Innovative Technologies

3.5.1 Artificial Intelligence (AI)

`new` National Municipality Act

Following the changes in the national Municipality Act, starting from 1 July 2022 municipalities and regions have the right to delegate decision-making to an automated function in cases where the national Administrative Procedure Act is fully applicable and where automated decision-making does not conflict with other legislation.

3.5.2 Big Data

No legislation has been adopted in this field to date.

3.5.3 Cloud Computing

No legislation has been adopted in this field to date.

3.5.4 Internet of Things (IoT)

No legislation has been adopted in this field to date.

3.5.5 High-performance Computing

No legislation has been adopted in this field to date.

3.5.6 High-speed Broadband Connectivity

No legislation has been adopted in this field to date.

3.5.7 GovTech

No legislation has been adopted in this field to date.

4 Digital Public Administration Infrastructure

4 Digital Public Administration Infrastructure

4.1 Platforms and Applications

4.1.1 National platforms and applications

Government Portal

The Government Portal serves as the website for the Swedish government and government offices. It is structured and intended to provide documents and records, information about current government bills, initiatives and ministerial activities, and accounts of how the decision-making process works in Sweden.

The website has four main sections:

- **Government and government offices**, offering up-to-date information listed by Ministry, Minister and subject area;
- **Government policies**, providing an overview of the policies applicable in Sweden and related EU policies;
- **Documents and publications**, containing all information, materials and publications issued in English or other foreign languages (along with an ordering service); and
- **How Sweden is governed**, focussing on the context around the work of the government and the government offices. Decision-making processes, the EU and other matters are described and exemplified.

Swedish Open Data Portal

Since September 2018, Digg has been responsible for the management and development of the Swedish Open Data Portal, dataportal.se. The portal was formally launched in 2020 after a period in a beta version. At the same time, the older and preceding data portal oppnadata.se was closed. The dataportal.se portal aims to provide easy access not only to data resources from both private and public sector organisations, but also to specifications and terminologies important for making data available in a standardised and structured manner. Data providers can also find support for the process of making data available on the data portal. Furthermore, measures have been introduced to publish open data and conduct open data-driven innovation through knowledge sharing and an online community. All data on dataportal.se are also made available on the European Data Portal.

Swedish Geodata Portal

The Swedish Geodata Portal (*Geodataportalen*) is a national registry for spatial data services that enables users to search, view and download data. The portal is hosted by the Swedish Mapping, Cadastral and Land Registration Authority (*Lantmäteriet*) in its role as national coordinator for the Swedish spatial data infrastructure. The *Lantmäteriet* also provides information on the national geodata strategy, the Swedish spatial data sharing model and the Geodata Advisory Board, as well as tutorials and other initiatives. Complemented by the Swedish Open Data Portal (*Sveriges data portal*), *Geodataportalen* is, in turn, the access point for the Inspire Geoportal operated by the European Commission.

Openaid.se Portal

Openaid.se is a website about Swedish development assistance built on open government data from all authorities that handle funds within the Swedish government's Expenditure Area 7 – International Development Cooperation. Data from different sources are collected in one single site with the purpose of making this information accessible for everyone who is interested to find out when, to whom and for what purpose Swedish development assistance funds have been allocated – and what the results have been. The idea is also to open up a debate and dialogue on development assistance and its results.

The Swedish International Development Cooperation Agency (Sida) has developed Openaid on behalf of the Ministry of Foreign Affairs, within the context of the transparency guarantee that was established in 2010. The guarantee means that public documents and information about Swedish development assistance are actively made available on the web. On 30 September 2020, a new updated version of openaid.se was launched. Open data on Openaid are published by Sida according to the International Aid Transparency Initiative (IATI) standard.

Verksamt.se Portal: the Swedish Business Link to Government

The verksamt.se portal serves as a comprehensive single-entry point for entrepreneurs and enterprises to access relevant and official eServices and information from many public authorities and municipalities. The portal is managed in collaboration between the authorities that provide services to entrepreneurs. The Swedish Companies Registration Office (*Bolagsverket*) is responsible for the technical operation and the Swedish Agency for Economic and Regional Growth (*Tillväxtverket*) for maintaining the editorial content.

The portal provides guidance and information about starting and running a business, including eServices for the formal registration in the Business Registry and the tax registration. It also includes interactive checklists, general information and inspiration for many lines of businesses. During the pandemic, it was a central point for information about all measures relevant for businesses.

A new platform will be operating by the end of 2023 and will open opportunities for further development of the verksamt.se portal with more, better and easier information and eServices for entrepreneurs and enterprises.

Läkemedelskollen: the Citizens Portal for Medicine Checks

Läkemedelskollen is the portal the Swedish eHealth Agency provides for citizens over 18, who, with an eID, can access the information stored electronically in the registers for which the Agency is responsible. These registers are the National Medication List and the High-Cost Protection Database. An additional register in the portal is the ePrescription for animals, which however is not included in the National Medication List.

Portal for Business Taxonomies

The website taxonomier.se publishes the taxonomies developed within the framework of the Swedish Companies Registration Office's government assignments to (i) introduce a service for submitting financial information regarding annual reports, etc. (registration number: N2016/04957/SUN); and (ii) develop a service for digital submission of annual reports, etc. for all types of companies (registration number: N2018/02033/FF). Taxonomier.se will serve as a portal to provide guidance and information about taxonomies to providers of SBR-compatible software. For more information on the SBR, see Section 6.3.

National Portal for Application to Higher Education

Administered by the Swedish Council for Higher Education (UHR), the national portal antagning.se offers a single point of contact for applying to all higher education courses and programmes at the first and second cycle levels. The portal also contains information about application rules and procedures, important dates, and guidance for understanding how to interpret and handle different grading systems. The UHR also administers the international portal universityadmissions.se, where international students can apply for admission to courses and programmes offered in English.

Minpension.se: a National Portal for Pension Summary

The minpension.se portal is the result of a collaboration between the Swedish government and about 30 pension actors, both private and public, aiming to provide residents in Sweden with a service for keeping control of the different forms of pensions earned throughout their working life. The portal provides support for making a projection and gaining an overview of the pension. Since it is financed by 50% by the Swedish government and for the rest by the connected pension actors, the portal is a neutral and cost-free service for residents.

1177.se: the National Portal for Healthcare Guidance and eServices

The Swedish Healthcare Guide, offered by national and regional healthcare actors in collaboration, provides citizens in Sweden with a single point of access for information and services related to health guidance, and personal eServices and information (1177 *Vårdguiden*). The guide 1177.se is provided by Inera AB.

Mina Ombud

Mina Ombud is a Swedish national infrastructure for secure and digital management of powers of attorney currently under development by the Swedish Companies Registration Office, in close

cooperation with the Swedish Tax Agency and Digg. The need for a digital management of powers of attorney has increased, leading to separate similar initiatives over the country. So, in order to save time and budget to the benefit of society, Mina Ombud is the national infrastructure meant to handle digital powers of attorney for the entire country.

The infrastructure provides a national web portal, minaombud.se, which allows companies and people to create, sign, delete and view powers of attorney. The infrastructure also allows external eServices to connect, so that representatives can act in eServices online on behalf of someone else, e.g. filling out eDeclarations or eApplications. The national infrastructure is limited to powers of attorney and does not include other kinds of powers of representation. Those digital powers of attorney will be valid for governmental and municipal agencies, but also with private actors in the long run.

Jobtech Development: a Collaboration Platform

JobTech Development is a platform initiated in 2018 bringing together actors operating within or in relation to the Swedish labour market with a view to collaborating on open data, connected application programming interfaces (APIs) and complementary operational support system (OSS) projects. The platform is orchestrated by the Swedish Public Employment Service, a Swedish national government agency responsible for enabling the matching between jobseekers and employers on the labour market. Since June 2021, Jobtech has also been coordinating a cross-functional governmental assignment to develop a data infrastructure for skill supply and lifelong learning.

Efterlevandeguiden.se

Efterlevandeguiden.se is a website with aggregated information created in 2015. It provides information for those who recently lost someone close and explains what to do and when, and whom to contact. It is a collaboration between three government agencies, the Swedish Social Insurance Agency, the Swedish Pension Agency and the Swedish Tax Agency.

4.1.2 Subnational Platforms and Applications

Platform for Cooperative Use

Dela Digitalt, the platform for cooperative use of ideas is provided by SALAR in order for the public sector to exchange knowledge regarding development, methods and tools. It was launched in 2016 with the purpose of contributing to a more efficient development process in the public sector.

Data Labs for Innovation

The Swedish Innovation Agency, Vinnova, is currently funding eleven data labs focussing on gathering actors, and sharing best practices and tools with the purpose of increasing and improving the conditions for data-driven innovation. The labs, run by both public and private organisations, are mainly domain-specific and hosted by the organisation in charge of data in each respective domain. Examples of labs are:
- The National Forest Data Lab (hosted by the Swedish Forest Agency);
- The Swedish Space Data Lab 2.0 (hosted by AI Sweden); and
- Ocean Data Factory Sweden (hosted by the Gothenburg University).

4.2 Networks

Swedish Government Secure Intranet

The Swedish Government Secure Intranet (SGSI) is an intranet service for secure communication between government agencies, and among EU Member States and EU bodies via TESTA, the European Community's own private IP-based network for secure information exchange among the European public administrations. The SGSI has a wider function than that of being a national node to TESTA, as it is also used for secure communication between national users. The network is also expected to become increasingly important for national crisis communication among Swedish government agencies.

The SGSI is an IP service, a virtual private network which has no direct connection with the open internet. According to the security target in force, the SGSI is used by accredited government agencies. Accreditation implies that sensitive information which has been classified according to

the EU Council's security regulations as 'Restreint UE' can be transferred to TESTA and to connected agencies.

4.3 Data Exchange

Secure Data Communication

The infrastructure for secure digital communication is developed and operated by Inera AB, owned jointly by municipalities, regions and SALAR. Since March 2022 it has been possible to connect to the infrastructure, which enables a safe exchange of information between authorities. The solution uses the CEF eDelivery building block, i.e. the architecture for safe transport of information between entities that is provided by Digg.

Common Public Sector Digital Infrastructure for Information Exchange

The Swedish government is currently implementing a common digital infrastructure named Ena – The digital infrastructure of Sweden. The purpose is to strengthen the public sector's ability to deliver efficient, secure and innovative digital services. The implementation is ongoing and described in a report published on 17 January 2023. Another report analyses the prerequisites for the participation of municipalities and regions in the infrastructure.

4.4 eID and Trust Services

`new`

Official Electronic ID Card

In 2005, the Swedish government introduced the 'official' eID card containing biometric data. The new 'national identity card' (*nationellt identitetskort*) is not compulsory and does not replace previous paper ID cards. It can be used as proof of identity and citizenship, and as a valid travel document within the Schengen area. The card complies with the International Civil Aviation Organisation (ICAO) standards for biometric travel documents; it is issued by passport offices and manufactured by the same supplier as the biometric passport. In addition to the contactless chip containing a digital picture of the holder, it also has a traditional chip, which may be used to securely access eGovernment services in the future.

Despite the fact that it can be read electronically, the card is not an eID that can be used in order to authenticate the user remotely. A study proposed to complement it with an eID according to eIDAS level of assurance 'high', but no decision has been made yet. On 22 December 2022 the government announced that they decided to launch a special study that will submit proposals on how a State eID at the highest security level should be introduced in Sweden. It will also suggest how a digital identity wallet should be issued according to the requirements of the upcoming EU regulation eIDAS II. A digital identity wallet must be able to be used both online and offline and can, for example, be used to open a bank account or declare taxes in all EU countries. The individual himself must have full control over what data is shared.

Non-Official eID Cards and Software-based eIDs (eLegitimation)

The supply of eIDs in Sweden goes through an open system whereby all suppliers issuing eIDs for private persons and fulfilling certain requirements are allowed to sign a contract with the public sector. Before the suppliers can be approved, Digg performs an audit. The eIDs available to Swedish citizens are eID cards or mobile/computer-based eIDs issued by different providers, like the BankID (developed by the largest Swedish banks), Telia and Freja eID+, to access certain eGovernment services.

Any physical person with a Swedish personal identity number (a unique identification number for all registered residents in Sweden) and permanently living in Sweden can obtain an eID. Persons without personal identity number or not permanently living in Sweden can prove their identity and obtain an eID only under specific circumstances.

The personal identity number is used as identifier when the eID is used for an eService, while legal entities can have an organisational number as identifier. The same number can be used in certificates for authentication and signing. The certificates contain the name of the organisation and the organisational number, and may also include a URL. The contact person ordering organisation certificates must have an authorisation for this purpose from a person authorised to sign on behalf of his/her organisation.

Most actors in the public sector base their eServices on the SAML 2.0 standard, even though old eID schemes do not follow this standard. For this reason, most eServices rely on proxy identity providers (IdPs). This system has worked well, but deviations from the standard in the implementation of proxy IdPs have become an obstacle for implementing cross-border authentications and for new suppliers that fulfil the standard.

eIDAS

Sweden has implemented the eIDAS infrastructure and has established communication with all notified countries which are also technically prepared to deliver identity assertions according to their notification (twelve at the moment). Moreover, about 190 agencies and municipalities have now integrated cross-border authentication among their eServices or have initiated the integration process. Most of the services, however, require that the eID assertion contains a Swedish identification number, which prevents users to take full advantage of the service.
Sweden has notified Freja eID+ and made it available for other Member States, but no Member State has established a connection yet.

Biometric Passports

In October 2005, Sweden became the second European country to start issuing biometric passports compliant with the standards recommended by ICAO. The ePassport has a Radio Frequency Identification (RFID) microchip embedded in its polycarbonate data page containing a digital photo and personal information in the form of a fingerprint photo, complying with Council Regulation (EC) No. 2252/2004 from October 2005. After the revision of the Passport Act in 2007, passports have started including fingerprints as from June 2009. Swedish passports then had a second state-of-the-art revision in 2012, and additional features and cutting-edge technology will be integrated following the third revision of biometric travel documents in Sweden on 1 January 2022.

4.5 eProcurement

eProcurement Virtual System

The central eProcurement authorities' role consists in monitoring the supplied services and compliance with standards. In general, the Swedish government has not implemented a central electronic public procurement portal, as this is deliberately left up to private operators. Several privately owned and operated portals exist instead, some of which concentrate on public procurement.

Information on Coordinated Public Sector Framework Agreements

The National Procurement Services offer a website, avropa.se, that serves as an information database on the different framework agreements which were procured centrally by the National Procurement Services. The portal contains information on framework agreements available to national authorities. In the field of IT and telecom, framework agreements are also available to Swedish municipalities and regions. An agency can thus use the information portal to locate the necessary information on a framework agreement, whereas the procurement process is further handled by the agency itself, either by electronic or traditional means.
Differently, general information on public procurement in Sweden is to be found at the website of the National Agency for Public Procurement. Furthermore, the National Agency for Public Procurement is involved in the pre-award phase of eTendering in Peppol, while Digg is active in the post-award phase. This means that Sweden has increased its efforts to digitise the whole eProcurement process.

eInvoicing Infrastructure and Standard

The European eInvoicing standard, EN 16931, is mandatory according to the Law on Electronic Invoices as a Result of Public Procurement (2018), but the law permits agreements on the use of other formats. Digg recommends the use of Peppol BIS Billing 3, which is an implementation (CIUS) of EN 16931. According to the Ordinance for Electronic Information Exchange (2003), central government authorities must support Peppol BIS Billing 3, but can also support a few older invoice formats in existing agreements.

Digg also recommends the use of the Peppol infrastructure for sending and receiving invoices as well as other eProcurement messages. Digg is the Peppol authority of Sweden, leading the work on the national Peppol infrastructure and offering support primarily to service providers within Peppol but also to end users, like suppliers from the private sector and buyers in the public sector.

4.6 ePayment

eKrona Project

`new`

The aim of the *Riksbank*, Sweden's Central Bank, is to contribute to a stable and efficient financial system, which includes that the general public is able to make payments. To that end, it has the task of promoting a safe and efficient payment system, which may be more difficult in the future. In December 2022, the *Riksbank*'s survey showed that in Sweden almost all payments are made digitally, and that people often shop online and are using cash less frequently. In an increasingly digital world, where cash is no longer used as a means of payment by the majority of households and companies, the *Riksbank* therefore needs to consider what role it should adopt.

In this context, Sweden started a project in the spring of 2017 to examine the possibility of issuing a new Central Bank Digital Currency (CBDC), the so-called *eKrona.* An *eKrona* would give the general public access to a digital complement to cash whose value would be guaranteed by the government. At present, the *Riksbank* only offers digital money to banks and other RIX participants.

To increase the knowledge of the CBDC, since February 2020 the *Riksbank* has been running a pilot study of concept, the *eKrona* pilot, with a technical supplier (Accenture) to develop and test a platform based on distributed ledger and blockchain technology for an *eKrona* system in a limited test environment. The objective of the *eKrona* pilot is to learn more about the available technologies in particular and to investigate (technical, policy and legal) issues regarding an *eKrona* in general.

The survey also showed that it is becoming increasingly common to integrate payment cards into mobile phones. Based on these results, the *Riksbank* stated that work to prepare a possible *eKrona* needs to be continued. The *eKrona* would give the general public access to government-issued money even if cash were to be marginalised further. Additionally, the *eKrona* would strengthen the resilience of the payment market and contribute to innovation.

The decision of whether Sweden should introduce an *eKrona* is ultimately a political decision and an investigation is ongoing about the State's role in the payment market and the need for a CBDC.

4.7 Knowledge Management

Dela Digitalt: A Knowledge Sharing Platform for Municipalities and Regions

Dela Digitalt, an open source platform, was developed by SALAR with a view to providing a possibility to share knowledge to all Swedish municipalities and regions. Through its user-driven setup, personnel and organisations can share experiences, from e.g. development projects, change processes and developed tools, which can improve work and cooperation within the public administration.

Network Open Source and Data

In the Network Open Source and Data (NOSAD) public entities gather to share best practices and lessons learned through monthly workshops on subjects concerning innovation, open data and open source. In addition, they collaborate on community initiatives, such as a catalogue of open source software used within public services. The purpose is to inspire the public sector as to how to take the next step to promote innovation and maximize the effects of digitalisation using open data and open source. The network is organized by the Swedish Public Employment Service (Jobtech Development), Digg, SALAR and the Swedish Internet Foundation.

Digitalhjälpen: Increasing the Digital Competence among the Elderly

Particularly elderly persons face specific challenges to use the possibilities that digital services and tools offer, a matter that was made significantly acute by the 2020 COVID-19 pandemic. In light of this, the Swedish government assigned the PTS a mission to conduct efforts to improve the ability of elderly people to use digital services and increase digital participation, thus lessening their social isolation.

As part of these efforts, the website *Digitalhjälpen* ('The digital help') was launched as a means to support the elderly. The site is composed of the following sections: (i) examples of digital services; (ii) support for increasing digital competence; and (iii) guides to use a number of common digital services.

4.8 Cross-border Infrastructures

EUCARIS, EULIS, BRIS and Peppol

In terms of cross-border interoperability, Sweden participates in several major activities providing vehicle information at the European level, including the European Car and Driving Licence Information System (EUCARIS). Sweden is also a member of the European Land Information Service (EULIS) and part of the eJustice Portal, the Business Registry Interconnection System (BRIS) and Peppol, where Digg manages the Swedish jurisdiction as national Peppol authority.

Large-Scale Pilots TOOP and DE4A

Sweden was among the 50 organisations from 20 EU Member States and associated countries that participated in the Once-Only Principle Project (TOOP), whose goal was to explore and demonstrate the Once-Only principle through multiple pilots. The result of the project - the TOOP infrastructure for information exchange - is now the basis for the technical system that handles the exchange of information regulated by the Single Digital Gateway Regulation.
As the technical system is still under evaluation and further development, Sweden is participating in the pilot project Digital Europe For All (DE4A). DE4A continues the development of the infrastructure initiated in the framework of TOOP. The project made its final delivery in January 2023. The Swedish authorities that participated in DE4A are the same as in TOOP, i.e. the Swedish Companies Registration Office, the Swedish Tax Agency and the Stockholm University.

Electronic Exchange of Social Security Information

Sweden makes use of the Electronic Exchange of Social Security Information (EESSI) too. EESSI is an IT system which helps social security bodies across the EU exchange information more rapidly and safely (as required by EU regulations on social security coordination). The goal is to ensure that communication between national bodies on cross-border social security files takes place using structured electronic documents.

Nordic Smart Government and Business

The collaboration on Nordic Smart Government and Business (NSG&B) was initiated by the director-generals of the Nordic Business Registries in 2016. With the support from Nordic Innovation (the Nordic Council of Ministers), a strong Nordic collaboration was established. Since 2021, all Nordic tax authorities are involved and have a seat in the steering group, and an increasing number of other authorities are continuously joining.
About 2 million SMEs operate in the Nordic region, accounting for more than 90% of all businesses and thus forming the cornerstone of Nordic societies and their future welfare. In general, Nordic societies and businesses feature high levels of digital innovation, digital competence and application of digital services, which gives them a competitive advantage in the data economy. The vision of NSG&B is to create value for SMEs by making real-time business data accessible and usable for innovation and growth across the region, in an automatic, consent-based and secure manner.
The Swedish Companies Registration Office (*Bolagsverket*) is mandated by the government to lead the development of NSG&B in Sweden. In 2022, an extensive work took place to pilot and test the solutions, and cooperate with stakeholders in the market.

National Contact Point for eHealth

The Swedish eHealth Agency (*E-hälsomyndigheten*) is the national contact point for eHealth (NCPeH) at EU level. At present the Swedish eHealth Agency is finalising the infrastructure that is needed to send ePrescriptions cross-border.

4.9 Base Registries

Civil Registry

The Swedish Tax Agency (*Skatteverket*) is responsible for the Civil Registry.

Swedish Road Traffic Registry

The Swedish Transport Agency (*Transportstyrelsen*) is responsible for the Swedish Road Traffic Registry, including items such as vehicle registration.

Business Registry

The Swedish Companies Registration Office (*Bolagsverket*) is the main authority responsible for registering and making available company information.

Land Registry

The Swedish Mapping, Cadastral and Land Registration Authority (*Lantmäteriet*) is responsible for the Land Registry.

Framework for National Basic Data in Public Administration

Two government initiatives were introduced in May 2018, focusing on establishing the foundation for a more standardised and interoperable national approach to base registries and information exchange. Several key stakeholders were involved, including some of the larger government agencies and Digg, which had the responsibility to coordinate work. The final reports were submitted in 2019. In line with the reports, at the end of the same year two new government assignments were given to the same stakeholders and government agencies, with Digg in the lead, to establish a common public sector digital infrastructure for information exchange and a framework for national basic data in public administration. The framework and the digital infrastructure were established during 2021; a new version of the framework will be published in 2023. There are currently five basic data domains that are being developed:

- **Person:** the Swedish Tax Agency (*Skatteverket*) is responsible for the Civil Registry;
- **Companies:** the Swedish Companies Registration Office (*Bolagsverket*) is responsible for registering and making available company information;
- **Real estate information and geographic information:** the Swedish Mapping, Cadastral and Land Registration Authority (*Lantmäteriet*) is responsible for the basic data domain;
- **Health, care and welfare:** the Swedish eHealth Agency (*E-hälsomyndigheten*) is responsible for the basic data domain; and
- **Transport system:** the Swedish Transport Administration (*Trafikverket*) is responsible for the basic data domain.

4.10 Innovative Technologies

4.10.1 Artificial Intelligence (AI)

No infrastructure has been reported in this field to date.

4.10.2 Distributed Ledger Technologies

No infrastructure has been reported in this field to date.

4.10.3 Big Data

No infrastructure has been reported in this field to date.

4.10.4 Cloud Computing

No infrastructure has been reported in this field to date.

4.10.5 Internet of Things (IoT)

No infrastructure has been reported in this field to date.

4.10.6   High-performance Computing

National Supercomputer Centre at Linköping University

Berzelius, located at the NSC at the Linköping University, was Sweden's fastest supercomputer for AI and machine learning in 2021. It is based on an Nvidia DGX Super Pod architecture and has a computing capacity of 300 PetaFlops for AI. Berzelius is an important resource for the development of AI research conducted in collaboration between academia and industry.

new   Dardel Supercomputer at the Royal Institute of Technology

The KTH Royal Institute of Technology signed a contract in 2021 for a new supercomputer. The system is an HPE Cray EX supercomputer featuring AMD EPYC™ processors and AMD Instinct™ GPU accelerators. It is housed in the PDC Center for High Performance Computing at the KTH main campus in Stockholm. The Dardel supercomputer was installed in two phases. As of December 2022, Dardel was the fastest high-performance computing system in Sweden and the 5th in the worldwide Green500 list. In recent months, Dardel has undergone a number of expansions and upgrades. The most significant is that 56 GPU nodes have been installed. They are now in operation and in the process of undergoing acceptance tests.

LUMI Supercomputer

The LUMI consortium, where the Swedish Research Council is a member, signed an agreement to build a supercomputer. The investment is part of the EuroHPC JU, including Sweden as member. The project was finalised in 2021. The LUMI supercomputer was built in Finland and provides world-class performance, offering great opportunities for Swedish research and innovation.
The government considers that the ongoing cooperation in the EuroHPC initiative contributes to European added value by enabling European researchers to access supercomputers capable of performing calculations on an exascale.

Quantum Technology

Sweden's flagship quantum initiative, the Wallenberg Center for Quantum Technology (WACQT), was established in 2018, and includes several universities and industrial partners. The main goals of the WACQT are to develop a competence base in Sweden for quantum technology and to build a quantum computer based on superconducting circuits. The quantum computer being built is currently at 25 gigabits, aiming for 100. A copy of the computer will also be built, offering companies and researchers additional availability for testing and exploration.
The WACQT consists of two parts: (i) an excellence programme for quantum-related research; and (ii) a core project on quantum computing. It is funded for a 12 year-period by the Knut and Alice Wallenberg Foundation (approximately USD 110 million), universities (approximately USD 30 million) and industry partners (approximately USD 15 million). The WACQT is led by Prof. Per Delsing from Chalmers University and the other participating universities are the KTH Royal Institute of Technology, the Lund University, the Stockholm University, the Linköping University and the Gothenburg University.
In addition, the Swedish Innovation Agency (Vinnova) provides government funding for quantum technology. The objectives of Vinnova's programme are (i) to facilitate the formation of a Swedish stakeholders' national quantum agenda; (ii) to establish common goals for cooperation; (iii) to promote cooperation platforms; and (iv) to foster entrepreneurs in start-ups and intrapreneurs in industry.
Finally, the European Quantum Communication Infrastructure (EuroQCI) initiative will be a secure quantum communication infrastructure encompassing the whole EU, including its overseas territories. The open call for CEF Digital of 2022 will contribute to cross-border projects.

4.10.7   High-speed Broadband Connectivity
No infrastructure has been reported in this field to date.

4.10.8   GovTech
No infrastructure has been reported in this field to date.

5 Digital Public Administration Governance

5 Digital Public Administration Governance

For more details on Sweden's responsible bodies for digital policy and interoperability, its main actors, as well as relevant digital initiatives, please visit the NIFO collection on Joinup.

5.1 National

`new` ### Ministry of Finance

In January 2023, the Ministry of Infrastructure was abolished and its competencies were transferred to the Ministry of Rural Affairs and Infrastructure, the Ministry of Climate and Enterprise, and the Ministry of Finance. The latter is now responsible for matters relating to digital policy. The Minister specifically responsible for digital policy is Mr. Erik Slottner, Minister for Public Administration.

Agency for Digital Government

In 2018, the Agency for Digital Government (Digg) was established to serve as hub for the digitalisation of the public sector. The primary objective is to improve the coordination of public sector digitalisation and support it at the central, regional and local levels. The agency is also responsible, inter alia, for eIdentification, eInvoicing, digital post, web accessibility, digital infrastructure for information exchange, and promotion of access to and usability of public data. Digg is also the Swedish National Coordinator for the Single Digital Gateway, as defined in Article 28 of Regulation (EU) 2018/1724. Moreover, Digg manages the Swedish data portal, dataportal.se, with the goal of providing a national infrastructure which increases access to public data. During 2021, Digg established a formal organisation for the Swedish data portal responsible for the development and support of increased access to open data and data-driven innovation. Digg also provides methodological support and guidelines to help public actors in making data available for reuse.

In the budget bill for 2021 and 2022, the Swedish government decided to set aside annual funds for the growth of a common public sector digital infrastructure. The funds are at the disposal of Digg and can be used by cooperating parties to intensify work.

National Government Service Centre

The National Government Service Centre (*Statens Servicecenter*) coordinates the administration of government agencies by offering administrative support services to other government agencies. By working together with other authorities, the Centre can coordinate the overall administrative service needs and deliver services that create volume advantages and cost efficiency within the Swedish State administration.

More specifically, it offers basic services in the areas of salary administration, financial administration and eCommerce. Its operations in payroll, human resources and finance will make the State's administration more efficient. At the service offices, it provides guidance and service to citizens and entrepreneurs in services from the Employment Agency, the Swedish Social Insurance Agency, the Swedish Pensions Agency and the Swedish Tax Agency. The Centre has also expanded cooperation with the municipalities in the country. An example is the city of Malmö and the service office in Rosengård, where citizens receive State and municipal services in the same place.

Swedish Social Insurance Agency

The Swedish Social Insurance Agency (*Försäkringskassan*) is tasked by the government to offer coordinated and secure IT operations for Sweden's authorities. For a more efficient and safer digitisation of the State administration, increased access to secure functions and improved competence regarding IT operations in the public sector are needed. The government verifies that *Försäkringskassan* has the necessary capacity, competence and experience in the field to build up the necessary capabilities within a relatively short time.

Försäkringskassan offers everything, from a comprehensive commitment to IT operations for authorities that have little resources for IT operations, to individual IT services for authorities that manage most of their IT operations in-house. The assignment originally extended through 2020, but has been prolonged until 31 December 2024.

Swedish eHealth Agency

The Swedish eHealth Agency (*E-hälsomyndigheten*) was established in 2014. It is responsible for registers and IT services relating to the management of prescriptions, meeting pharmacies' and caregivers' need to have access to patient-safe and cost-effective information. The Agency is also responsible for coordinating the government's initiatives concerning eHealth and following the overall development in the eHealth area. During the last years, the Agency has been responsible for issuing the EU Digital Covid Certificates in Sweden.

Swedish Civil Contingencies Agency

The Swedish Civil Contingencies Agency (MSB) is responsible for issues related to civil protection, public safety, emergency management and civil defence. The MSB's responsibilities include supporting and coordinating Swedish cyber and information security, acting as the single point of contact (SPOC) for Directive (UE) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union (NIS Directive) as well as issuing regulations on cybersecurity.

The MSB provides extensive support for a systematic and risk-based information security management, partly through the website informationssakerhet.se. The MSB is also tasked with receiving reports of serious IT incidents from critical market operators (as part of the NIS Directive) as well as from governmental agencies. Based on these two kinds of reports the MSB publishes two summarising reports on a yearly basis. Furthermore, the MSB hosts the Swedish national Computer Security Incident Response Team (CSIRT), CERT-SE. For more information about CERT-SE, see the dedicated paragraph below.

Legal, Financial and Administrative Services Agency

The National Procurement Services, a department within the central government agency called Legal, Financial and Administrative Services Agency (*Kammarkollegiet*), procure and manage coordinated framework agreements for the public sector in the area of ICT. More in general, the task of the National Procurement Services is to procure and provide coordinated framework agreements for goods and services of general use to central government agencies, as specified in the Government Regulation concerning the *Kammarkollegiet* and in the Ordinance on Coordinated Public Procurement (1998:796). In the area of ICT framework agreements can also be used by local and regional authorities.

eCollaboration Programme

Government agencies that were members of the eGovernment delegation started a programme in 2015 to continue their collaboration in the digital field. The main focus of the eCollaboration Programme (*eSamverkansprogrammet*) is to cooperate in developing digital solutions and promote interoperability by networking, using guidelines, and sharing knowledge and best practices. The steering group is formed by the director-generals of the member agencies. By the end of 2021, 35 government agencies had joined the eCollaboration Programme as members. The secretariat is hosted by the Swedish Pensions Agency.

Municipal Cooperation and Development

Local authorities have their own Collaboration for Cooperative Use (*Sambruk*), the purpose of which is to cooperate around business development and digital services, and to exchange best practices, that way speeding up the development of eGovernment in municipalities. Slightly more than one third of the Swedish municipalities have been collaborating for 15 years in more than 30 projects developed to identify, design and introduce common system architectures, technical platforms and basic functions for digital services in municipalities. They also actively share knowledge around state-of-the-art topics regarding digitalisation and related change management.

Swedish Agency for Public Management

The Swedish Agency for Public Management (*Statskontoret*) is tasked with providing support to the government and to government bodies through analyses and evaluations of State and State-funded activities. *Statskontoret* sometimes conducts studies, upon the government's request, in the field of digitalisation to help modernise public administration through the use of ICT.

Swedish Post and Telecom Authority

The Swedish Post and Telecom Authority (PTS) monitors the electronic communications and postal sectors in Sweden. Its mission is to ensure that everyone in Sweden has access to efficient, affordable and secure communication services. The PTS works on consumer and competition issues, efficient utilisation of resources and secure communications. It is a public agency reporting to the Ministry of Finance and is managed by a board appointed by the government. The PTS is also the Swedish supervisory authority for issuers of qualified certificates to the public.

Swedish National Digitalisation Council

The Swedish National Digitalisation Council serves in an advisory role on matters of digitalisation in Sweden. In addition to its advisory function, it also provides a forum for strategic discussion between the government, and private and public representatives of various sectors of society.

CERT-SE

CERT-SE is Sweden's National CSIRT and the constituency consists of the Swedish society, including, but not limited to, governmental authorities, regional authorities, municipalities, enterprises and companies.
In brief, the relevant ordinance states that CERT-SE shall:
- Respond promptly when IT incidents occur by spreading information and, where needed, working on the coordination of measures, and assist in the work needed to remedy or alleviate the consequences of incidents;
- Cooperate with authorities that have specific tasks in the field of information security; and
- Act as Sweden's point of contact for equivalent services in other countries, and develop cooperation and information exchanges with them.

CERT-SE is certified by the Trusted Introducer Service and fulfils the requirements relating to a national CSIRT as established in the NIS Directive.

National Centre for Cybersecurity

The government commissioned four government agencies - the National Defence Radio Establishment (FRA), the Swedish Armed Forces, the MSB and the Swedish Security Service - to establish a national cybersecurity centre by 2020. The National Cybersecurity Centre aims to strengthen and increase national capacity to prevent, detect and manage cyberattacks and other cyberincidents that risk damaging Sweden's security. The activities in the Centre will be developed gradually and expand over a five-year period to have full effect in 2025. The goal in the long run is to:
- Compile joint analyses and promote overall situational awareness regarding threats and vulnerabilities;
- Disseminate information between participating authorities and other actors; and
- Coordinate work in the event of cyberincidents, including cyberattacks.

AI Sweden

AI Sweden is the national centre for applied AI, jointly funded by the Swedish government, and several public and private partners. Its mission is to accelerate the use of AI to the benefit of society, competitiveness and everyone living in Sweden. To achieve this, AI Sweden runs projects of national interest in areas such as information-driven healthcare, AI solutions for the Swedish language, data-driven journalism and AI to help tackle climate change. It also provides targeted training for its partners and the general public.

Innovation Centre

To ensure continuous harmony between the latest technological developments in the financial sector and regulatory requirements, Sweden's Financial Supervisory Authority (*Finansinspektionen*) launched in March 2018 the Innovation Centre. This is the first point of contact for businesses that are uncertain about the rules and principles governing innovations. The Centre also acts as a catalyst for testing new business ideas and examining how these may fit in the regulatory framework. Even though *Finansinspektionen* has no explicit goal in promoting innovations such as the blockchain technology, it is based on the principle that regulation and supervision should not constitute an obstacle to developments in the financial sector, provided that consumers and investors alike are protected.

Swedish Authority for Privacy Protection

The Swedish Authority for Privacy Protection is a supervisory authority under the General Data Protection Regulation (GDPR) and the Data Protection Directive. It also supplements and implements the Act (2018:218) on Data Protection. The Swedish Authority for Privacy Protection is also Sweden's national supervisory authority for the processing of personal data under the Schengen Convention, the Convention on the EU's Customs Information Systems, the Decision of the Council on the establishment of the EU Agency for law enforcement cooperation (Europol), the Regulation concerning the Visa Information System (VIS Regulation) and the Regulation on the establishment of EURODAC (EURODAC Regulation).

5.2 Subnational (federal, regional and local)

Swedish Association of Local Authorities and Regions

In 2007, the Swedish Association of Local Authorities and the Federation of Swedish County Councils (FCC) formed a joint federation, the Swedish Association of Local Authorities and Regions (SALAR). SALAR is an organisation representing and advocating for local government in Sweden. All of Sweden's municipalities and regions are members of SALAR.

Inera AB

Inera AB coordinates the development and management of joint digital solutions that will help to streamline regions and municipalities' operations. Inera AB is a company owned by regions and municipalities, as well as SALAR.

6 Cross-border Digital Public Administration Services

6 Cross-border Digital Public Administration Services for Citizens and Businesses

Further to the information on national digital public services provided in the previous chapters, this final chapter presents an overview of the basic cross-border public services provided to citizens and businesses in other European countries. Your Europe is taken as reference, as it is the EU one-stop shop which aims to simplify the life of both citizens and businesses by avoiding unnecessary inconvenience and red tape in regard to 'life and travel', as well as 'doing business' abroad. In order to do so, Your Europe offers information on basic rights under EU law, but also on how these rights are implemented in each individual country (where information has been provided by the national authorities).

Please note that, in most cases, the EU rights described in Your Europe apply to all EU member countries plus Iceland, Liechtenstein and Norway, and sometimes to Switzerland. Information on Your Europe is provided by the relevant departments of the European Commission and complemented by content provided by the authorities of every country it covers. As the website consists of two sections - one for citizens and one for businesses, both managed by DG Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) - below the main groups of services for each section are listed.

6.1 Life and Travel

For citizens, the following groups of services can be found on the website Your Europe:
- Travel (e.g. Documents needed for travelling in Europe);
- Work and retirement (e.g. Unemployment and Benefits);
- Vehicles (e.g. Registration);
- Residence formalities (e.g. Elections abroad);
- Education and youth (e.g. Researchers);
- Health (e.g. Medical Treatment abroad);
- Family (e.g. Couples);
- Consumers (e.g. Shopping).

6.2 Doing Business

Regarding businesses, the groups of services on the website Your Europe concern:
- Running a business (e.g. Developing a business);
- Taxation (e.g. Business tax);
- Selling in the EU (e.g. Public contracts);
- Human Resources (e.g. Employment contracts);
- Product requirements (e.g. Standards);
- Financing and Funding (e.g. Accounting);
- Dealing with Customers (e.g. Data protection).

The Digital Public Administration Factsheets

The factsheets present an overview of the state and progress of Digital Public Administration and Interoperability within European countries.

The factsheets are published on the Joinup platform, which is a joint initiative by the Directorate General for Informatics (DG DIGIT) and the Directorate General for Communications Networks, Content & Technology (DG CONNECT). This factsheet received valuable contribution from Sophie Ankarcrona (Ministry of Finance, Digital Government Division).

The Digital Public Administration factsheets are prepared for the European Commission by Wavestone.

An action supported by Interoperable Europe

The ISA² Programme has evolved into Interoperable Europe - the initiative of the European Commission for a reinforced interoperability policy.

The work of the European Commission and its partners in public administrations across Europe to enhance interoperability continues at full speed despite the end of the ISA² programme. Indeed, enhanced interoperability will be necessary to unlock the potential of data use and reuse for improved public services, to enable cross-border collaboration, and to support the sector-specific policy goals set by the Commission for the future.

Interoperable Europe will lead the process of achieving these goals and creating a reinforced interoperability policy that will work for everyone. The initiative is supported by the Digital Europe Programme.

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